

AMENDMENTS TO THE CLAIMS

The following Listing of Claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-4 (canceled)

Claim 5 (currently amended): A method for manufacturing a copper alloy welding electrode tip of a welding machine, comprising the steps of:

enabling any of chromium (Cr), zirconium (Zr), beryllium (Be), titanium (Ti)

and boron (B) to dissolve in a solid solution in a base-material metal (Cu) as a second element that does not dissolve or scarcely dissolves in copper in a solid solution state at room temperature, wherein respective addition ratios of the second element being Cr: 0.1 to 1.4 wt%, Zr: 0.15 to 0.5 wt%, Be: 0.1 to 3.0 wt%, Ti: 0.1 to 6.0 wt%, B: 0.01 to 0.5 wt%,

applying a strain equivalent to an elongation of not less than 200% to this material to achieve crystal grain refinement, wherein strain is applied by extruding the material, and extrusion conditions are such that lateral extrusion is performed at a material temperature of 400 to 1,000°C, a die temperature of 400 to 500°C, and an extrusion speed of 0.5 to 2.0 mm/sec, and

subjecting this material to aging treatment simultaneously with or subsequent to application of this strain, thereby promoting precipitation of the second element among crystal grains.

Claims 6-8 (canceled)

Claim 9 (currently amended): ~~The~~A method for manufacturing a copper alloy welding electrode tip of a welding machine ~~according to claim 5, wherein the material is subjected~~ comprising the steps of:

enabling any of chromium (Cr), zirconium (Zr), beryllium (Be), titanium (Ti)

and boron (B) to dissolve in a solid solution in a base-material metal

(Cu) as a second element that does not dissolve or scarcely dissolves

in copper in a solid solution state at room temperature, wherein

respective addition ratios of the second element being Cr: 0.1 to 1.4

wt%, Zr: 0.15 to 0.5 wt%, Be: 0.1 to 3.0 wt%, Ti: 0.1 to 6.0 wt%, B:

0.01 to 0.5 wt%,

applying a strain equivalent to an elongation of not less than 200% to this

material to achieve crystal grain refinement, wherein strain is applied

by extruding the material, and extrusion conditions are such that lateral

extrusion is performed at a material temperature of 400 to 1,000°C, a

die temperature of 400 to 500°C, and an extrusion speed of 0.5 to 2.0

mm/sec, and

subjecting this material to aging treatment before ~~a~~ this strain is applied to the material.

Claims 10-24 (canceled)